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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,698	02/18/2004	Chi-Lin Chang	OP-092000390	8960
7590	11/15/2005		EXAMINER CHANDRAN, BIJU INDIRA	
Yi-Wen Tseng 4331 Stevens Battle Lane Fairfax, VA 22033			ART UNIT 2835	PAPER NUMBER

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/779,698	Applicant(s) CHANG ET AL.	
	Examiner Biju Chandran	Art Unit 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. Claim 5 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The applicant recites a limitation that the "dimension of the central space" is larger than the "surface area of the thermal conducting medium". Since dimension refers to a length along any of the three axes (with units of length), and surface area refers to the area of something (with units of length<sup>2</sup>), this comparison is incorrect. For the purposes of examination, the examiner has interpreted this claim to mean "the surface area of the central space is larger than the surface area of the thermal conducting medium".

### ***Claim Rejections - 35 USC § 102***

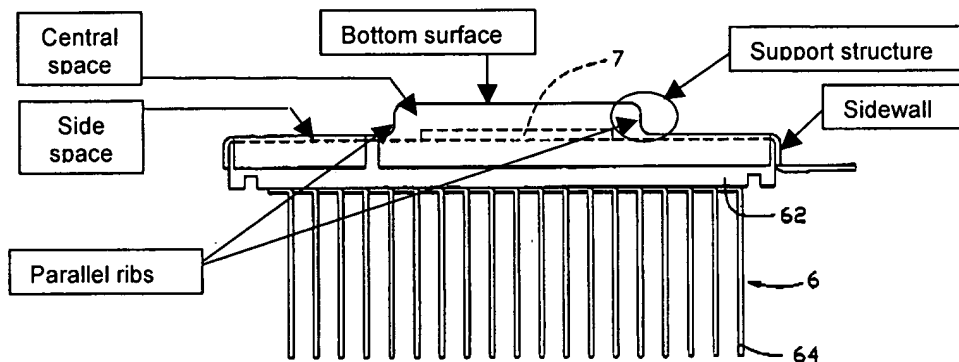
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

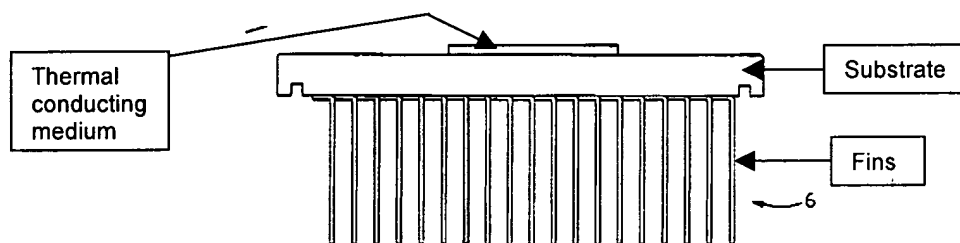
2. Claims 1, 3-5, 9-11, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Dong et al. (US Patent 6,935,420 B1).



- With reference to claim 1, Dong et al. disclose a protection structure (1) for a thermal conducting medium (7) of a heat dissipation device (6), comprising: a bottom surface, to cover the thermal conducting medium (7); a side wall (marked) extending along and projecting from a periphery of the bottom surface (marked) to form a space for receiving the thermal conducting medium and a portion of the heat dissipation device; and a support structure protruding (marked) from the bottom surface to avoid a direct contact between the thermal conducting medium and the bottom surface.

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- With reference to claim 3, Dong et al. further disclose that the support structure includes a pair of ridges protruding from and extending across the bottom surface (see attached figure and figure 1).
- With reference to claim 4, Dong et al. further disclose that the space formed by the sidewall is divided into a central space for receiving the thermal conducting medium and a pair of side spaces.
- With reference to claim 5, Dong et al. further disclose that the surface area of the central space is larger than the surface area of the thermal conducting medium (evident from that attached figure).



- With reference to claim 9, Dong et al. further disclose that the heat dissipation device (6) includes a substrate, a plurality of fins projecting from a first surface of the substrate, and the thermal conducting medium attached to a second surface of the substrate.
- With reference to claim 10, Dong et al. further disclose that the bottom surface is conformal to the substrate (see figure 2).
- With reference to claim 11, Dong et al. further disclose that the sidewall has a height lower than the height of the fins (evident from figure 2 and 3A).

- With reference to claim 14, Dong et al. further disclose that the support structure includes a pair of parallel ribs (marked in figure).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Dong et al., in view of Bhatia et al. (PGPub. US 2003/0123338 A1). Dong et al. disclose all the limitations of claim 1, but do not disclose that the support structure includes a plurality of bumps. Bhatia et al. disclose a heat dissipation device (18) with a plurality of bumps (28) protruding from the bottom surface (22). At the time the invention was made it would have been obvious to one of ordinary skill in the art to incorporate the bumps as taught by Bhatia et al. in the protection structure as disclosed by Dong et al., to define a thickness for the thermal conducting material (Bhatia et al, abstract).
4. Claims 6-8, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dong et al. in view of Campbell et al. (PGPub. US 2003/0150770 A1).

- Regarding claim 6, Dong et al. discloses all the limitations of claim 1, and further discloses that the sidewall forms a friction fit structure. However, Dong et al. does not disclose friction fit structures protruding from the sidewall. Campbell et al. disclose a protection structure for a thermal conducting medium (paragraph 0044), comprising a plurality of friction fit structures (20) protruding from the sidewall (18). At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the protruding friction fit structures as taught by Campbell et al. in the protection structure as disclosed by Dong et al. to retain the thermal conducting medium rigidly.
- Regarding claim 7, Campbell et al. further discloses that the friction fit structure includes a plurality of ribs (20).
- Regarding claim 8, Dong et al. discloses all the limitations of claim 1, but does not disclose a flange on the top edge of the sidewall. Campbell et al. disclose a flange (24) on the top edge of the sidewall (18). At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the flange on the top edge of the side wall, as taught by Campbell et al., in the protection structure for a thermal conducting medium as disclosed by Dong et al. to strengthen the structure, and to mate with a lid to protect the entire heat dissipation device.

- Regarding claim 12, Dong et al. discloses all the limitations of claim 9, but does not disclose that the sidewall is level with the tips of the fins. Campbell et al. disclose a protection structure for a thermal conducting medium (figure 6, paragraph 0044), where the sidewall covers the tips of the fins (as seen in '60' of figure 6). While Campbell et al. does not explicitly disclose that the sidewall is level with the tips of the fins, it is obvious from figure 6 that the sidewalls have to such that it at least covers the pins. If the sidewalls of Campbell et al. is not already level with the tip of the fins, It would have been obvious to one of ordinary skill in that art to make the height of the sidewalls to be level with, higher than, or lower than, the tip of the fins to provide maximum protection to the heat dissipating device while decreasing the size of the protection device.
  - Regarding claim 13, Dong et al. modified by Campbell et al., as applied above, discloses all the limitations of claim 12. Campbell et al. further discloses a lid (seen in figures) to seal the heat dissipation device within the protection structure.
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6,049,458 and PGPub US 2003/0075312 A1 both disclose protection structures for heat dissipating devices, that have features in common with the claimed invention.

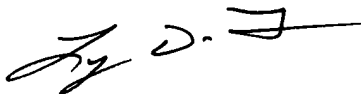


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Biju Chandran whose telephone number is (571) 272-5953. The examiner can normally be reached on 8AM - 5PM. Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**LYNN FEILD**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**